



Nuclear Waste

Yucca Mountain, located southwestern Nevada, has been studied for over 20 years as a potential site for the permanent geologic disposal of the nation's high-level radioactive waste. During this period, EES Division played a key leadership role in many aspects of Yucca Mountain research, making many outstanding contributions to the characterization effort. Examples of our contributions include modeling groundwater percolation (based on chlorine-36 measurements in the ESF); collecting extensive data on borehole samples, using quantitative mineralogic-petrologic analysis; and assessing the hazard and consequences of volcanism at the site.

For the past two years, our Yucca Mountain studies have supported the Total System Performance Assessment, which will determine if the site is indeed suitable for a repository. Our recent contributions, which are detailed below, range from developing mineralogical models to further refining and verifying numerical codes used to simulate radionuclide transport in the unsaturated and saturated zones. EES experimentalists have also led and participated in field tests at the Exploratory Studies Facility and at Busted Butte, where we conducted research on colloid-facilitated transport of radionuclides.